

**Fiscal Year 2008 Work Plan**  
**Water Quality Academic Advisory Committee**

**Prepared for the**

Virginia Department of Environmental Quality  
Office of Water Quality Programs

**Submitted by**

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# **FRESHWATER NUTRIENT CRITERIA**

## **Goal and Objectives**

The AAC goal for FY08 activities is to continue its work on freshwater nutrient criteria for streams and rivers. These activities will build on AAC work that was initiated during FY06. The major objective of the FY08 work plan is to provide assistance to the DEQ Office of Water Quality Programs in the development of freshwater nutrient criteria for Virginia's wadeable and nonwadeable streams and rivers. Specific objectives of the AAC FY07 work plan are:

## **Work Plan**

### **Objective**

The AAC will continue to provide assistance to Virginia DEQ in development of a scientifically sound but workable approach to nutrient criteria in wadeable and nonwadable freshwater streams.

**Task 1: Work with DEQ to conduct a "trial run" (pilot program), and to evaluate the outcome of that activity.**

#### **1a.**

Work with DEQ to develop and organize a "trial run" (pilot program) of the screening value approach that can be implemented by DEQ in Fall of 2007 and Spring 2008. The "trial run" program will be conducted by DEQ personnel, in a manner similar to that described in the proposal submitted to EPA entitled "A Weight of Evidence Screening Value Approach to Nutrient Criteria Development for Wadeable Streams in Aggregate Nutrient Ecoregions IX and XI: Proposed Pilot Program in Virginia," with level of effort determined by resources available to DEQ. The goal will be to organize the activity in a manner such that it is integrated as closely as possible with DEQ biologists' existing responsibilities, so as to maximize the number of sites and the utility of the data to be generated without requiring unreasonable expense by DEQ and unreasonable effort by the DEQ biologists' staff.

#### **1b.**

Provide assistance and advice to DEQ biologists in development of a visual assessment protocol for potential application within a screening-value approach to nutrient criteria, for application during the "trial run" procedure.

#### **1c.**

Analyze Fall '07 trial run data, and prepare a report of Fall '07 results to DEQ. [This task is written assuming that Spring '08 results will not be available until June or July, too late to consider during FY '08 activities].

**1d.** Evaluate Fall '07 trial-run results as needed to recommend protocol adjustments, if needed, for Spring '08 implementation.

**1e.** Hold a working meeting of the AAC in January of 2007 to evaluate Fall '07 "trial run" results and to discuss options for nutrient criteria implementation, considering the timetable that requires DEQ to propose criteria for implementation in late 2008. Such a meeting may include discussion of Fall '07 trial-run results with DEQ biologists and WQS staff during a morning session, and an open discussion among the AAC members in the afternoon, although the actual agenda would be determined as the meeting date approaches.

### **Deliverables**

Deliverables for Task 1-5 include a "trial run" implementation plan, developed in consultation with DEQ; a visual assessment protocol for implementation by DEQ biologists during Fall 2007 trial-run activity; analysis of Fall 2007 trial run data; and recommendations for adjustment of trial-run protocol during spring 2008 application, if any adjustments prove necessary. Data analysis and interpretation of Fall 2007 trial-run program data.

### **Task 2**

The objective of this task is analyze relationships between nutrient concentrations and aquatic life (fish community) metrics in Virginia's *non*-wadeable streams. Preliminary results of a pilot study conducted during FY07 suggest that statistical relationships may exist between some nutrient measures and selected fish community metrics for Virginia streams and rivers. The proposed FY08 activity is an extension of pilot study to refine putative relationships. As an outcome, we will recommend to DEQ if relationships found present are an adequate basis for nutrient criteria development and, if so, what such criteria might be.

### **Deliverables**

The outcome from analysis will identify the nutrient and fish community metrics that are the best candidates for specific nutrient criteria. In addition, this task will determine the most appropriate geospatial scales for the characterization of nutrient and biological integrity status. Finally, the outcome of this task will include specific recommendations for further analyses.

### **Task 3**

The objectives of task are to review water quality monitoring programs that have implemented photopigment analyses and to assess the utility of this method as part of the water quality monitoring program for non-wadeable flowing waters in Virginia (Paul B)

### **Deliverables**

The outcome will include review of published studies and possibly a preliminary assessment of data collected in the Chesapeake Bay.

### **Task 4**

Meet with DEQ water quality standards staff to discuss nutrient criteria development during late winter or spring of 2008. Participate in meetings scheduled by DEQ to inform stakeholders of nutrient criteria development progress.

## **Timetable**

Summer 2007: AAC works with DEQ biologists as needed to prepare visual assessment and data recording protocol for use in Fall, 2007, “trial run” sampling.

Winter 2007/08: DEQ provides to AAC raw data resulting from “trial run” program. We request that these data be provided by late December, 2007, if possible.

Winter 2007/08: AAC meets with DEQ biologists to review preliminary “trial run” data analysis, and to discuss the program. DEQ Water Quality Standards and/or other groups within DEQ are also invited to participate.

February, 2008: AAC members prepare preliminary, draft reports in preparation for March 2008 AAC-DEQ meeting. The goal will be to circulate draft reports for review prior to the meeting, to enable informed discussion at the meeting.

- Report of Task 1 (Summary and Data analysis of Fall 2007 trial-run program) data.
- Report on Task 2 (fish community metrics – nutrient relationships)
- Report on Task 3 (potential for use of photopigment analysis)

March 2008: AAC-DEQ meeting in Charlottesville

May 1: AAC provides draft final report to DEQ, for review and comment.

June 15: Final Report to DEQ.